

OIB - DC-8 10/14/16 Science Report

Aircraft:

[DC-8](#) ([See full schedule](#))

Date:

Friday, October 14, 2016

Mission:

OIB

Mission Location:

Punta Arenas, Chile

Mission Summary:

Mission: George VI 02 (priority: high)

This is a new flight, designed to improve previous OIB bathymetry measurements (primarily through gravimetry combined with depth-sounding radar) under the southwestern half of the George VI ice shelf. It does this by interlacing the 2011 OIB grid over that portion of the shelf. In addition, it includes three lines from the 2011 ?George VI? mission, also on the southwestern portion, for the purpose of measuring dh/dt.

Weather over our target areas today was generally quite poor, with almost the entire Bellingshausen and Weddell Seas covered in low clouds. The entire coast of West Antarctica from roughly the English Coast to the west was also socked in, as was the northern and eastern Peninsula, most of the Ronne-Filchner drainage, and the polar plateau. Of our target areas, this left the English Coast, George VI, and Evans Ice Stream relatively clear. High resolution satellite imagery is not available for this portion of Antarctica during the morning hours when we must make our flight decisions, only some low-resolution imagery. Therefore we selected the George VI 02 mission mostly on the basis of three weather models (GFS, ECMWF and WRF) suggesting that it had the best chance of clear skies of the three candidates. This decision was further informed by the fact that the British base at Fossil Bluff, located a short distance north of our grid but also in George VI sound, also reported clear skies this morning. When we arrived on site, the skies were indeed quite clear except for an isolated stratus layer, which was trapped in the valley between Alexander Island and the southwestern flank of the Peninsula, and directly over the George VI ice shelf. The top of this stratus was at approximately 1800' above the surface. This forced us to remain above that altitude, at approximately 2000'. We successfully obtained radar and gravity data throughout the mission, but only obtained optical data from ATM and DMS on the two ends of each line where the rising terrain climbed out of the stratus, and for portions of the two southwesternmost grid lines over the ice shelf itself, where the stratus began to break up.

All instruments performed well, with the exception of the optical instruments being unable to see through the stratus over the ice shelf.

Data volumes:

AIRGrav: 5 Gb

ATM: 30 Gb

CAMBOT: 9 Gb

DMS: 45 Gb

FLIR: 17 Gb

Ku-Band Radar: 513 Gb

MCoRDS: 1.7 Tb

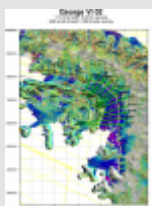
Narrow Swath ATM: 38 Gb

Snow Radar: 513 Gb

total data collection time: 5.2 hrs

Images:

Map of George VI 02



[Read more](#)

Northern Alexander Island



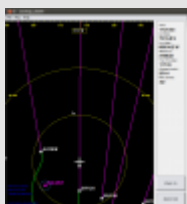
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Glory



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Wildlife avoidance



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Peninsula ice drainage



[Read more](#)

Submitted by:

John Sonntag on 10/23/16

Related Flight Report:

DC-8 10/14/16 - 10/15/16

Flight Number:

1140

Payload Configuration:

OIB-ATM NAV/ATM GPS/ATM-T5/T6/ATM FLIR/ATM CAMBOT MCoRDS/SNOW/Ku RADAR DMS/POS-AV
GRAVIMETER

Nav Data Collected:

Yes

Total Flight Time:

10.9 hours

Submitted by:

Chris Jennison on 10/19/16

Flight Segments:

From:

SCCI

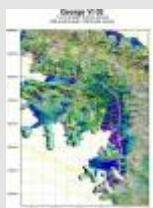
To:

SCCI

Start:	10/14/16 13:08 Z	Finish:	10/15/16 00:02 Z
Flight Time:	10.9 hours		
Log Number:	178010	PI:	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	This was the first science data flight for OIB this year. The objective was George VI ice sheet. Instruments performed well after some initial difficulties. The mission was a success. We encountered more low-lying clouds/fog than expected which had an impact on the amount of ATM data we could collect, but this particular flight relied more on data recorded from the Gravimeter for the majority of the lines. The lines designed for ATM had satisfactory weather conditions.		

Images:

George VI flight track



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Flight Hour Summary:

	178010
Flight Hours Approved in SOFRS	300
Total Used	306.9
Total Remaining	-6.9

178010 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/04/16	1135	Science	4	4	296
10/05/16	1136	Science	2.7	6.7	293.3
10/12/16	1138	Transit	10.9	17.6	282.4
10/12/16	1139	Transit	3	20.6	279.4
10/14/16 - 10/15/16	1140	Science	10.9	31.5	268.5
10/15/16 - 10/16/16	1141	Science	11.8	43.3	256.7
10/17/16 - 10/18/16	1142	Science	11.8	55.1	244.9
10/20/16 - 10/21/16	1143	Science	11.4	66.5	233.5
10/22/16	1144	Science	11	77.5	222.5
10/24/16 - 10/25/16	1145	Science	11.5	89	211
10/25/16 - 10/26/16	1146	Science	11.3	100.3	199.7
10/26/16 - 10/27/16	1147	Science	12.1	112.4	187.6
10/27/16 - 10/28/16	1148	Science	11.5	123.9	176.1
10/28/16 - 10/29/16	1149	Science	11	134.9	165.1

10/31/16 - 11/01/16	1150	Science	11	145.9	154.1
11/02/16 - 11/03/16	1151	Science	11.2	157.1	142.9
11/03/16 - 11/04/16	1152	Science	11.5	168.6	131.4
11/04/16 - 11/05/16	1153	Science	11.1	179.7	120.3
11/05/16 - 11/06/16	1154	Science	11.7	191.4	108.6
11/07/16 - 11/08/16	1155	Science	11.2	202.6	97.4
11/09/16 - 11/10/16	1156	Science	11.7	214.3	85.7
11/10/16	1157	Science	10.9	225.2	74.8
11/11/16 - 11/12/16	1158	Science	11.3	236.5	63.5
11/12/16 - 11/13/16	1159	Science	11.1	247.6	52.4
11/14/16	1160	Science	10.9	258.5	41.5
11/15/16 - 11/16/16	1161	Science	11.6	270.1	29.9
11/17/16 - 11/18/16	1162	Science	11.1	281.2	18.8
11/18/16 - 11/19/16	1163	Science	11.1	292.3	7.7
11/21/16	1165	Transit	11.6	303.9	-3.9
11/21/16	1164	Transit	3	306.9	-6.9

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

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